

ABSTRACT

This invention discloses methods to attach and grow a monolayer of cultured human retinal pigment epithelial cells (RPE) for use in implantation into the brain as a treatment for Parkinson's disease. The invention will enable the delivery of the transplanted RPE cells in microcarriers composed of intergratable or degradable substrates, including glass, plastic, polymer gels, gelatin and collagen, and glycosaminoglycans (GAGS). The invention involves the coating of the microcarrier surface with diamond-like carbon, alone or in combination with attachment factors such as laminin, fibronectin, RGDS, and extracellular matrix to increase the attachment of the RPE to the surface. Additionally the invention discloses the use of bFGF conjugated with polycarbophil, EGF conjugated with polycarbophil and heparin sulfate as also being incorporated into the micro carrier to augment attachment and proliferation of RPE during transplantation.